

PATENT
2936-0151P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Nobusige ARAI et al. Conf.:
Appl. No.: Div. of 09/559,969 Group:
Filed: March 5, 2002 Examiner:
For: WASHER HAVING A PARTIAL WASHING APPARATUS,
AND WASHING APPARATUS

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

March 5, 2002

Sir:

The following preliminary amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE CLAIMS:

Please cancel claims 2-4 and 29-34 without prejudice or disclaimer of the subject matter contained therein.

Please amend the claims as follows:

1. (Amended) A washing machine having a partial washing apparatus that removes dirt from an article to be washed by means of supersonic vibration,

wherein the partial washing apparatus is fitted to the washing machine proper so as to be movable between an in-use position in which the partial washing apparatus is placed when in use and a not-in-use position, different from the in-use position, in which the partial washing apparatus is placed when not in use.

5. (Amended) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from the article to be washed by means of supersonic vibration,

wherein the partial washing apparatus comprises:

a supersonic resonator for generating supersonic vibration;
and

a supersonic vibration horn for amplifying the supersonic vibration, the supersonic vibration horn being arranged with a tip thereof placed near the article to be washed.

10. (Amended) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from the article to be washed by means of supersonic vibration,

wherein the partial washing apparatus comprises:

a supersonic resonator for generating supersonic vibration;

a supersonic vibration horn for amplifying the supersonic vibration, the supersonic vibration horn being arranged with a tip thereof placed near the article to be washed; and

a liquid-feed tank for storing the washing liquid, which is fed therefrom to the tip of the supersonic vibration horn.

12. (Amended) A washing machine having a partial washing apparatus as claimed in claim 10, further comprising:

a case that covers the partial washing apparatus and that has a slit formed therein in which the article to be washed is inserted,

wherein the washing liquid is fed to the slit.

19. (Amended) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from the article to be washed by means of supersonic vibration,

wherein the washing liquid is functional water obtained by altering properties of tap water in such a way that it offers higher detergent solubility or higher supersonic transmission efficiency.

Please add the following claims:

--35. (New) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a washing liquid is fed to a portion of the partial washing apparatus where the article to be washed is washed.

36. (New) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a case is provided that covers the supersonic vibration horn and that has an opening formed in a portion thereof corresponding to the tip of the supersonic vibration horn so that the tip of the supersonic vibration horn protrudes out through the opening.

37. (New) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein the partial washing apparatus is fitted to the washing machine proper so as to be movable between an in-use position above the washing machine in which the partial washing apparatus is

placed when in use and a not-in-use position, different from the in-use position, in which the partial washing apparatus is placed when not in use.

38. (New) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a holding member is provided that is pivotably supported in a peripheral portion of the washing machine at one end and that has the partial washing apparatus fitted at another end so that, as the holding member is pivoted, the partial washing apparatus is moved between the in-use position and the not-in-use position.

39. (New) A washing machine having a partial washing apparatus as claimed in claim 5,

wherein a slit into which to insert the particle to be washed is provided below the supersonic vibration horn.

40. (New) A washing machine having a partial washing apparatus as claimed in claim 39,

wherein a case is provided so as to cover the supersonic vibration horn, and the slit is formed in a lower portion of the case so as to be perpendicular to the tip of the supersonic vibration horn.

41. (New) A washing machine having a partial washing apparatus as claimed in claim 40,

wherein the slit is formed by an upper cover and a lower cover that together constitute the case.

42. (New) A washing machine having a partial washing apparatus as claimed in claim 41,

wherein an opening is formed in the upper cover, and the tip of the supersonic vibration horn is arranged so as to point to the opening.

43. (New) A washing machine having a partial washing apparatus as claimed in claim 42,

wherein an opening communicating with a drain outlet is formed in a lower cover in which the slit is formed, right below the supersonic vibration horn.

44. (New) A washing machine having a partial washing apparatus as claimed in claim 39,

wherein a washing liquid is fed to the slit.

45. (New) A washing apparatus comprising:
a supersonic wave generator;

a supersonic vibration horn for amplifying supersonic vibration, the supersonic vibration horn having a slit formed in a lower portion thereof so as to permit an article to be washed to be inserted in the slit.

46. (New) A washing apparatus as claimed in claim 45, wherein a case is provided so as to cover the supersonic vibration horn, and the slit is formed in a lower portion of the case so as to be perpendicular to the tip of the supersonic vibration horn.

47. (New) A washing apparatus as claimed in claim 45, wherein the slit is formed by an upper cover and a lower cover that together constitute the case.

48. (New) A washing apparatus as claimed in claim 47, wherein an opening is formed in the upper cover, and the tip of the supersonic vibration horn is arranged so as to point to the opening.

49. (New) A washing apparatus as claimed in claim 48, wherein an opening communicating with a drain outlet is formed in a lower wall surface in which the slit is formed, right below the supersonic vibration horn.

50. (New) A washing apparatus as claimed in claim 45,
wherein a washing liquid is fed to the slit.

51. (New) A supersonic vibrator comprising:
a supersonic resonator for generating supersonic vibration;
a supersonic vibration horn connected to the supersonic
resonator; and

a case having the supersonic resonator and the supersonic
vibration horn housed inside, wherein a tip portion of the
supersonic vibration horn protrudes from a tip of the case.--

REMARKS

Claims 1, 5-28, and 35-51 are pending in the present application. Claims 2-4 and 29-34 have been cancelled and claims 35-51 have been added. Claims 1, 5, 10, 19, 45, and 51 are independent.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

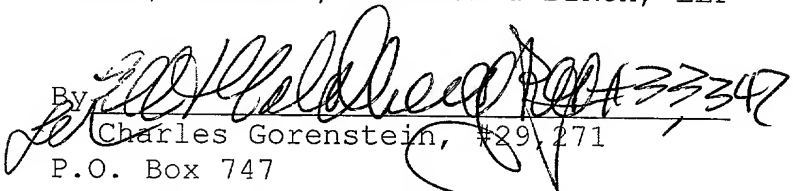
Attached hereto is a marked-up version of the changes made to the application by this Amendment.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Elliot A. Goldberg (Reg. 33,347) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachments

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 2-4 and 29-34 have been canceled.

The claims have been amended as follows:

1. (Amended) A washing machine having a partial washing apparatus that removes dirt from an article to be washed [by feeding a washing liquid agitated by supersonic vibration to the article to be washed] by means of supersonic vibration,

wherein the partial washing apparatus is fitted to the washing machine proper [with a holding member that holds the partial washing apparatus movably relative to the washing machine proper] so as to be movable between an in-use position in which the partial washing apparatus is placed when in use and a not-in-use position, different from the in-use position, in which the partial washing apparatus is placed when not in use.

5. (Amended) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from [an] the article to be washed [by feeding a washing liquid agitated by supersonic vibration to the article to be washed] by means of supersonic vibration,

wherein the partial washing apparatus comprises:

a supersonic resonator for generating supersonic vibration;
and

a supersonic vibration horn for amplifying the supersonic vibration, the supersonic vibration horn being arranged with a tip thereof placed near the article to be washed.

10. (Amended) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from [an] the article to be washed [by feeding a washing liquid agitated by supersonic vibration to the article to be washed] by means of supersonic vibration,

wherein the partial washing apparatus comprises:

a supersonic resonator for generating supersonic vibration;
a supersonic vibration horn for amplifying the supersonic vibration, the supersonic vibration horn being arranged with a tip thereof placed near the article to be washed; and

a liquid-feed tank for storing the washing liquid, which is fed therefrom to the tip of the supersonic vibration horn.

12. (Amended) A washing machine having a partial washing apparatus as claimed in claim 10, further comprising:

a case that covers the partial washing apparatus and that has a slit formed therein in which the article to be washed is inserted,

wherein the washing liquid [agitated by the supersonic vibration] is fed to [the article to be washed inserted in] the slit.

19. (Amended) A washing machine having a washing tub in which to put an article to be washed and comprising:

a partial washing apparatus that removes dirt from [an] the article to be washed [by feeding a washing liquid agitated by supersonic vibration to the article to be washed] by means of supersonic vibration,

wherein the washing liquid is functional water obtained by altering properties of tap water in such a way that it offers higher detergent solubility or higher supersonic transmission efficiency.

Claims 35-51 have been added.